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PTO/SB/08A (10-01)

**Substitute for form 1449A/PTO**

## **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

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### **C Complete if Known**

<b>Application Number</b>	09/963,983
<b>Filing Date</b>	09/25/2001
<b>First Named Inventor</b>	Zumbrunner
<b>Art Unit</b>	1723
<b>Examiner Name</b>	unknown

**Attorney Docket Number** CXU-336PA

## **U.S. PATENT DOCUMENTS**

**RECEIVED**  
FEB 15 2002  
**TC 1700**

## **FOREIGN PATENT DOCUMENTS**

**Examiner  
Signature**

Santosh

Date  
Considered

05 Aug 2003

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<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. Applicant is to place a check mark here if English language Translation is attached.

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#2, p.2

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 4

**Complete if Known**

Application Number	09/963,983
Filing Date	09/25/2001
First Named Inventor	Zumbrunnen
Group Art Unit	1723
Examiner Name	unknown

Attorney Docket Number CXU-336PA

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FEB 15 2004  
TC 1700**OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
<i>gaw</i>	C	Michael Ellison, David Zumbrunnen, Bridgette Gomillion and Jiong Wang -- "CHAOTIC MIXING IN EXTRUSION-BASED MELT SPINNING OF FIBERS" National Textile Center Annual Report: Nov. 1999 entire document	
	D	Michael Ellison and David Zumbrunnen -- "CHAOTIC MIXING IN EXTRUSION BASED MELT SPINNING OF FIBERS" -- National Textile Center Research Briefs: April 1999 entire document	
	E	Michael Ellison and David Zumbrunnen -- "CHAOTIC MIXING IN EXTRUSION BASED MELT SPINNING OF FIBERS" National Textile Center Research Briefs: August 1998 entire document	
	F	Michael Ellison and David Zumbrunnen -- "CHAOTIC MIXING IN EXTRUSION BASED MELT SPINNING OF FIBERS" National Textile center research Briefs: March 1998 entire document	
	G	Michael Ellison and David Zumbrunnen -- "CHAOTIC MIXING IN EXTRUSION BASED MELT SPINNING OF FIBERS" National Textile center research Briefs: August 1997 entire document	
	H	Y.H. Liu and D.A. Zumbrunnen -- "TOUGHNESS ENHANCEMENT IN POLYMER BLENDS DUE TO THE IN-SITU FORMATION BY CHAOTIC MIXING OF FINE SCALE EXTENDED STRUCTURES" Journal of Materials Science: April 1999 entire document	
	I	D.A. Zumbrunnen, K.J.C. Miles and Y.H. Liu -- "AUTO-PROCESSING OF VERY FINE-SCALE COMPOSITE MATERIALS BY CHAOTIC MIXING OF MELTS" Composites Part A Vo. 27A: 1996	
	J	Michael Ellison and David Zumbrunnen -- "CHAOTIC MIXING IN EXTRUSION BASED MELT SPINNING OF FIBERS" National Textile center research Briefs: Nov. 1996 entire document	
	K	R.I. Danescu and D.A. Zumbrunnen -- "CREATION OF CONDUCTING NETWORKS AMONG PARTICLE IN POLYMER MELTS BY CHAOTIC MIXING" Journal of Thermoplastic Composit Materials: July, 1998	
	L	Y.H. Liu and D.A. Zumbrunnen -- "EMERGENCE OF FIBRILLAR COMPOSITES DUE TO CHAOTIC MIXING OF MOLTEN POLYMERS" Polymer Composites, Vol. 17, No. 2: April 1996	
<i>gaw</i>	M	R.I. Danescu and D.A. Zumbrunnen -- "ASSESSMENT OF CHAOTIC MIXING AS A MEANS TO PRODUCE ELECTRICALLY CONDUCTING POLYMER COMPOSITES WITH METALLIC POWDERS" ANTEC Conference: 1996 entire document	

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*Sawyer*

Date Considered

05 Aug 2003

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DW	N	R.I. Danescu and D.A. Zumbrunnen -- "COMPUTATIONAL SIMULATION OF THE IN SITU FORMATION IN MELTS OF ELECTRICAL PATHWAYS AMONG PARTICLES TRANSPORTED BY TWO DIMENSIONAL CHAOTIC MIXING" Proceedings of ASME Heat Transfer Division Vol. 4, 1998 Entire document	
	O	R.I. Danescu and David Zumbrunnen -- "CREATION OF ELECTRICALLY CONDUCTING PLASTICS BY CHAOTIC MIXING" ANTEC Conference: 1998	
	P	R.I. Danescu -- "CHAOTIC MIXING AS A MEANS TO CREATE ELECTRICALLY CONDUCTING NETWORKS IN PLASTICS" Doctorial Dissertation Entire document	
	Q	Michael Ellison -- "CHAOS IN POLYMER PHASE TRANSITIONS" National Textile Center Annual Report: August 1995 Entire document	
	R	Michael Ellison, Bridgette Gomillion, David Zumbrunnen and Jiong Wang -- "CHAOTIC MIXING IN EXTRUSION-BASED MELT SPINNING OF FIBERS" National Textile Center Annual Report: 1997 Entire document	
	S	Michael Ellison, Bridgette Gomillion, David Zumbrunnen and Jiong Wang -- "CHAOTIC MIXING IN EXTRUSION-BASED MELT SPINNING OF FIBERS" National Textile Center Annual Report: Nov. 1998 Entire document	
	T	Michael Ellison, Bridgette Gomillion, David Zumbrunnen and Jiong Wang -- "CHAOTIC MIXING IN EXTRUSION-BASED MELT SPINNING OF FIBERS" National Textile Center Annual Report: Nov. 1999 Entire document	
	U	B.L. Gomillion, J. Wang, M.S. Ellison and D.A. Zumbrunnen -- "THREE-DIMENSIONAL CONTINUOUS CHAOTIC MIXING TO PRODUCE STRUCTURED FIBER COMPOSITS IN-SITU" Abstract from papers for 215th ACS National Meeting March 1998 -- Entire document	
	V	Sadhan C. Jana, Guy Metcalfe and J.M. Ottino -- "EXPERIMENTAL AND COMPUTATIONAL STUDIES OF MIXING IN COMPLEX STOKES FLOWS: THE VORTEX MIXING FLOW AND MULTICELLULAR CAVITY FLOWS" J. Fluid Mech. Vol. 269, 1994 -- Entire document	
	W	H.A. Kusch and J.M. Ottino -- "EXPERIMENTS ON MIXING IN CONTINUOUS CHAOTIC FLOWS" J. Fluid Mech. 1992 Entire document	
DW	X	D.F. Zhang and D. A. Zumbrunnen -- "CHAOTIC MIXING OF TWO SIMILAR FLUIDS IN THE PRESENCE OF A THIRD DISSIMILAR FLUID" AIChE Journal, Vol. 42, No. 12: December 1996 Entire document	/

Examiner Signature

S. M. Nelson

Date Considered

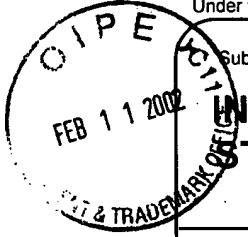
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## **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

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Sheet

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of

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***Complete if Known***

Application Number	09/963,983
Filing Date	09/25/2001
First Named Inventor	Zumbrunnen
Group Art Unit	1723
Examiner Name	unknown
Attorney Docket Number	CXU-336PA

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EB 15 2002  
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**OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS**

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Signature

S. D. Veltman

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Considered

05 Aug 2023

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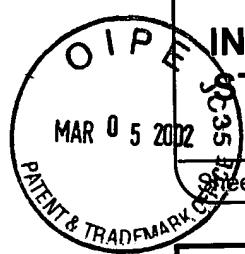


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Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet

2 of 3

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Application Number	09/963,983
Filing Date	09/25/2001
First Named Inventor	Zumbrunnen
Group Art Unit	1723
Examiner Name	unknown

Attorney Docket Number CXU-336PA

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
SMN	NN	Y.H. LIU and D.A. ZUMBRUNNEN -- "Toughness Enhancement In Blends Of Dissimilar Polymers Due to the In-Situ Formation By Chaotic Mixing Of Fine Scale Extended Structures At Low Minor Phase Concentrations" MD-Vol. 80 ASME 1997 -- Entire Document
	OO	D.A. ZUMBRUNNEN and Y.H. LIU -- Abstract and photomicrographs Page 202 Vol. 119 Transactions of the ASME May 1997 Entire Document
	PP	Y.H. LIU and D.A. ZUMBRUNNEN -- "Emergence of Fibrillar Composites Due To Chaotic Mixing Of Molten Polymers" ANTEC Conference 1995 Entire Document
	QQ	YUHUI LIU -- "Property Enhancements Due To The In-Situ Formation Of Fine Scale Extended Structures By Chaotic Mixing Of Polymer Melts" Doctoral Dissertation Clemson University 1997
	RR	K.C. MILES, Y.H. LIU, and D.A. ZUMBRUNNEN -- "Direct Synthesis Of Very Fine-Scale Composite Materials By Chaotic Mixing Of Molten Precursors" HTD-Vol. 289 Thermal Processing Of Materials: Thermo-Mechanics, Controls and Composites ASME 1994 -- Entire document
	SS	D.F. ZHANG and D.A. ZUMBRUNNEN -- "Chaotic Mixing of Two Similar Fluids In The Presence of A Third Dissimilar Fluid" ANTEC Conference 1996 Entire Document
	TT	D.F. ZHANG and D.A. ZUMBRUNNEN -- "Influences Of Fluidic Interfaces On The Formation Of Fine Scale Structures By Chaotic Mixing" Vol. 118, Transactions of the ASME March 1996 Entire Document
	UU	D.F. ZHANG and D. A. ZUMBRUNNEN -- "Influences Of Fluidic Interfaces During Formation Of Fine-Scale Composites By Chaotic Mixing Of Melts" HTD-Vol. 306, ASME 1995 National Heat Transfer Conference Entire Document
	VV	D.F. ZHANG, D.A. ZUMBRUNNEN and Y.H. LIU -- "Morphology Development In Shear Flows Of Straight and Folded Molten Fibers" AIChE Journal Vol. 44, February 1998 Entire Document
	WW	D. A. ZUMBRUNNEN -- "Composite Materials Evolved From Chaos" Proceedings of the 3rd Experimental Chaos Conference August 21-23, 1995 Entire Document
SMN	XX	D.A. ZUMBRUNNEN -- "Microstructures and Physical Properties Of Composite Materials Evolved From Chaos" Proceedings of the 4th Experimental Chaos Conference August 6-8, 1997 Entire Document

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*Smith*

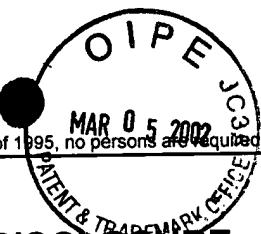
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PTO/SB/08B (10-01)

Applied for use through 10/31/2002, OMB 0651-0031  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE  
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Sheet 3 of 3

Sheet

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Filing Date	09/25/2001
First Name Inventor	Zumbrunnen
Group Art Unit	1723
Examiner Name	unknown
Attorney Docket Number	CXU-336PA

#### **OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS**

Examiner  
Signature

Sundstrom

Date  
Considered

05 Aug 2013

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